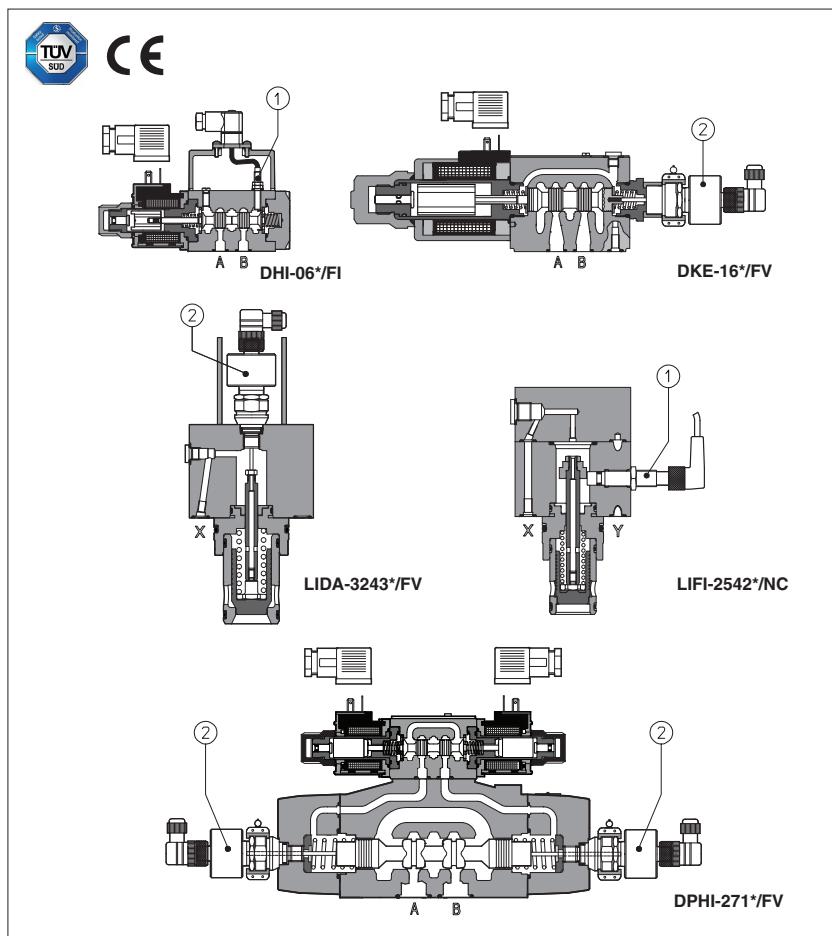


Safety valves

direct, pilot operated and cartridge execution
with inductive position or proximity switches
conforming to Machine Directive 2006/42/CE



These valves are designed to fulfil the safety criteria imposed to machine manufacturers by the European Machine Directive.

In addition to the normal hydraulic function they are equipped with inductive or proximity switches with on/off switch indicating the position of the spool/poppet of the valve. These valves are normally used to cut off the hydraulic power line in case of emergency condition, thus avoiding dangerous movements of the machines actuators. By checking the switch status, corresponding to "open" or "intercepted" hydraulic line, the machine controller can perform the safety function.

Two versions are provided:

- **FI** inductive proximity switch ①;
- **FV** inductive position switch (double contact) ②;
see section 12 for technical characteristics.

Safety valves are available in direct, piloted and cartridge execution and they keep the same hydraulic and electric characteristics of standard products from which they are derived.

Typical application is on presses or blow moulding machines to shut off the fluid energy to one or more actuators as a consequence of the opening of the machine "gate" or as a consequence of an "emergency stop" command.

The components shown on this technical table are CE marked and certified by TÜV, in accordance with the technical safety requirements provided in the **Machine Directive 2006/42/CE** but not included in the safety components of annex IV.

For details about the applicable EN standards, see www.atos.com, catalog on line, section P, table P004.

1 MODEL CODE OF DIRECTIONAL CONTROL SAFETY SOLENOID VALVES

DHI	-	0	63	1/2	/A	FV	/NC	-	X	24DC	**	/*	
Type of solenoid valve													
DHI, DHU, DHE, DHER = direct, size 06 (see tab. E010, E015)													
DKE, DKER = direct, size 10 (see tab E025)													
DPHI, DPHE, DPHER = piloted, size 16 and 25 (see tab. E085) size 10 on request													
Size ISO 4401													
0 = size 06													
1 = size 10													
2 = size 16													
3 = size 25													
4 = size 25 (high flow)													
Valve configuration, see section 2													
61 = single solenoid, central plus external position, spring centered													
63 = single solenoid, 2 external positions, spring offset													
67 = single solenoid, external plus central position, spring offset													
71 = double solenoid, 3 positions, spring centered													
75 = double solenoid, 2 external positions, with detent													
Spool type, see section 2													
Options (WP not permitted for safety valves)(1)													
Type of switch: FI = inductive proximity switch - available for all valves except DPH* and LIDA FV = inductive position switch - available for all valves except: DHU (all models) DKE(R)-17* with AC power supply													

(1) See tab. E010 for DHI and DHU, E015 for DHE and DHER, tab. E025 for DKE*, tab. E085 for DPH*.
DKE and DKER are always provided with Y drain port.

2 CONFIGURATIONS and SPOOLS

Valve type DH* and DKE*

Configurations	Spools				Configurations	Spools	
61	1 0 2	1 0 2	1 0 2	1 0 2	63	1 0 2	0/2
61/A					63/A		
67	0 2 M	1 0 2	1 0 2	1 0 2	75 (for DHE)	1 0 2	0/2
67/A					75 (for DKE)		
71	1 0 2	1 0 2	1 0 2	1 0 2	1/9		
					1/3(1)		
					2/7(2)		
					5/7(2)		
					77		
					(1)	only for DK*-1611/3/Y DC	
					(2)	(2) only for DHI valve configuration 61, not available version /A	

Valve type DPH*

Configurations	Spools				Configurations	Spools	
61	1 0 2	1 0 2	1 0 2	1 0 2	63	1 0 2	0/2
61/A					63/A		
67	0 2 M	1 0 2	1 0 2	1 0 2	75	1 0 2	2/2
67/A					75		
71	1 0 2	1 0 2	1 0 2	1 0 2	49		
					1/3(1)		
					16		
					17		
					58		
					77		
					(1)	For DP*-1 are available only spools: 0, 0/2, 1, 1/2, 3, 4, 5, 58, 6, 7	
					(2)	For DP*-6 are available only spools: 0, 1, 2, 3, 4, 5, 58, 6, 7, 8, 19, 91	

3 STATUS OF OUTPUT SIGNAL FOR DIRECTIONAL VALVES WITH INDUCTIVE SWITCHES TYPE FI

	Configuration 61	Configuration 63	Configuration 67	Configuration 71	Configuration 75
ISO 4401 size 06 and 10					
HYDRAULIC CONFIGURATION	1 INT. POS. 0	1 INT. POS. 2	0 INT. POS. 2	1 INT. POS. 0 INT. POS. 2	1 INT. POS. 2
high level SIGNAL S					
low level SIGNAL S					
high level SIGNAL SA					
low level SIGNAL SA					
high level SIGNAL SB					
low level SIGNAL SB					

Diagrams show the behaviour of the output signal for inductive switches type FI/NO. For inductive switches type FI/NC the behaviour is opposite (high level signal instead of low level signal and viceversa)

(1) According the criteria of safety specifications, the spool position signal must change its status during the intermediate position between two hydraulic configurations.

Note: FV versions can be electrically wired by the customer as NO or NC and then the status of the output signal will be in accordance to the selected configuration

4 SAFETY VALVES IN CARTRIDGE EXECUTION (MADE BY INTERMEDIATE ELEMENT AND COVER)

4.1 MODEL CODE FOR INTERMEDIATE ELEMENT INCLUSIVE OF THE CARTRIDGE

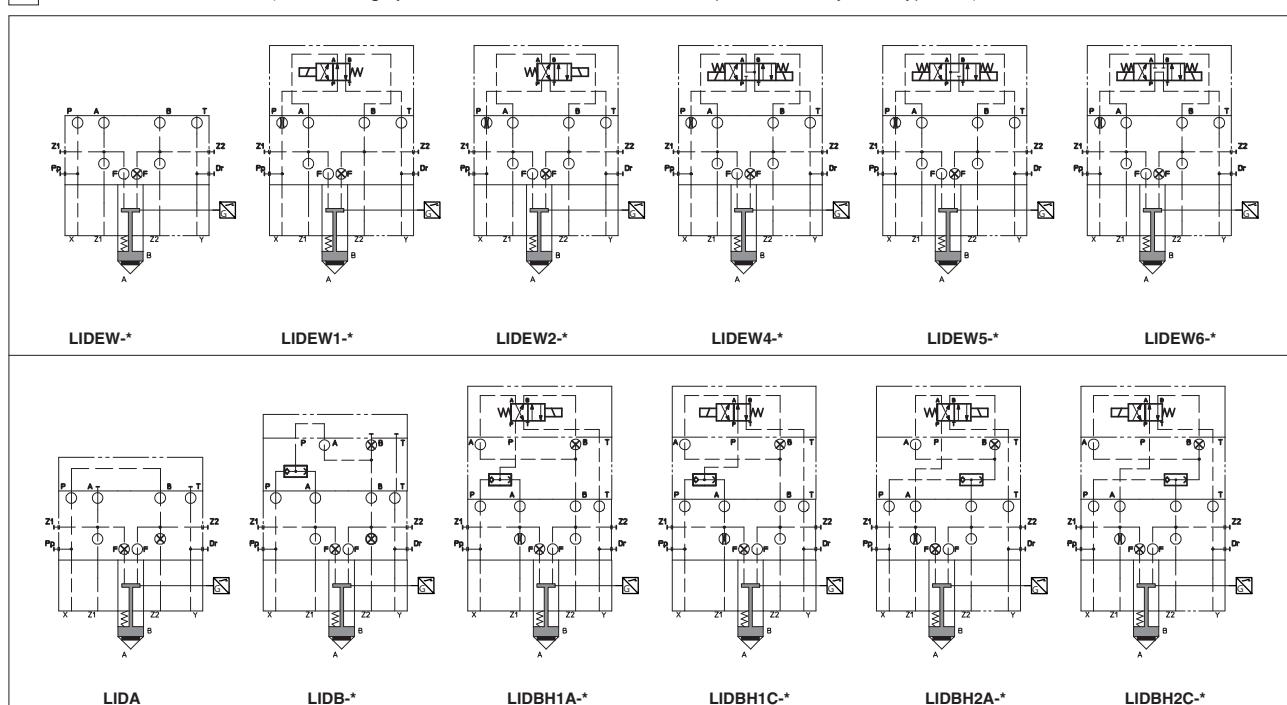
LIF	I - 25	42	1	/NC	**	I*
Intermediate element (with poppet position detector) including the cartridge						Seals material: omit for NBR (mineral oil & water glycol) PE = FPM
Type of switch: I = inductive proximity switch						Series number
Size (ISO 7368), the same of the cover (see section [2]) 16; 25; 32; 40; 50 Other dimensions available on request						/NC = closed contact with poppet in resting position
Type of poppet, see tab. H030 for Q/Δp diagrams 42 = With damping nose, area ratio 1:1,1 43 = With damping nose, area ratio 1:2 (for size 16 and 25) 1:1,6 (for size 32, 40 and 50) normally closed, to be coupled with covers type LIDA, LIDB, LIDBH**, LIDEW* see section 5.2						Spring cracking pressure: 1 = 0,3 bar for poppet 42; 0,6 bar for poppet 43 2 = 1,5 bar for poppet 42 3 = 3 bar for all poppets 6 = 5,5 bar for all poppets

Note: in these safety valves the cartridge and the intermediate element with poppet position detector cannot be separated.

4.2 COVER MODEL CODE

LID	A - 2 /	F	E	-I	X	24DC	**	I*	I*
Cover according to ISO 7368 to be coupled with LIFI safety valves									Special execution of the calibrated plugs in the pilot channels (see tables H030, H040)
Cover type, see section [6] for hydraulic configuration: A = direct pilot B = with shuttle valve for pilot selection; EW* = with solenoid valve for pilot selection BH** = as EW* but with shuttle valve for pilot selection;									Seals material: omit for NBR (mineral oil & water glycol) PE = FPM
Size 1 = 16; 2 = 25; 3 = 32; 4 = 40; 5 = 50; Other sizes available on request									Series number
F = prearranged for coupling with LIFI cover, see section [6]									Voltage code (only for LIDBH** and LIDEW*) see section [9]
E = with external attachment X (1/4" GAS) and underneath port X plugged									Only for LIDBH** and LIDEW*: X = without connector, to be order separately (see tab. K500)
According to the machinery safety requirements, in particular applications at least two safety valves (redundancy) will be provided (the first one leak free type). For valve type LIDB, LIDEW (in the configuration with external pilot line) Atos can supply leak free poppet type directional pilot valves type DLOH-3*. Consult our technical office for detailed information.									Type of pilot solenoid valve (only for LIDBH** and LIDEW*): -I = DHI for AC and DC supply with cJURus certified solenoids -E = DHE for AC and DC supply high performances -ER = DHER, as DHE but with cJURus certified solenoids

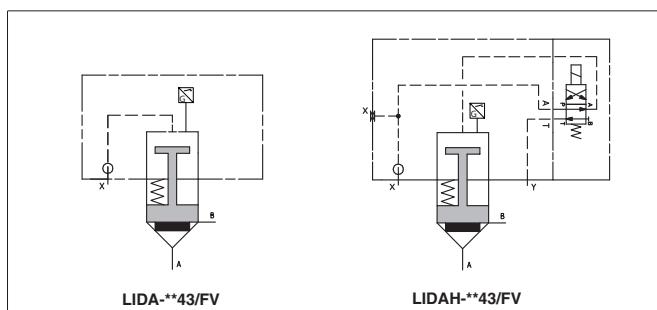
5 HYDRAULIC SYMBOLS (the following symbols shown the covers function coupled with safety valve type LIFI)



6 MODEL CODE OF SAFETY VALVES IN CARTRIDGE EXECUTION (INTEGRAL DESIGN COVER)

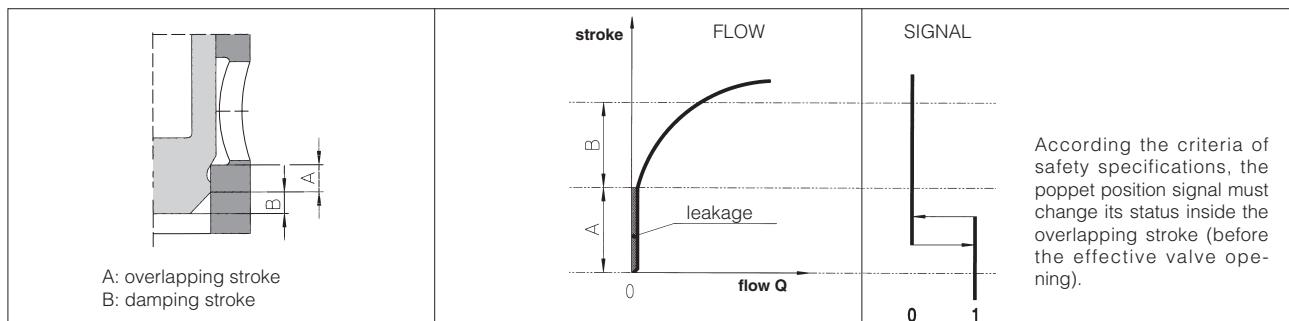
LIDA	H - 25	43	3	/ FV	- I	X	24DC	**	/*
Safety cartridge valve according to ISO 7368									
optional pilot valve :									
- = omit if not required									
H = with NG 6 pilot valve									
size:									
16 25 32 40 50									
poppet type:									
43 = with damping nose, area ratio 1:2 (size 16 and 25) 1:1.6 (size 32,40 and 50)									
spring cracking pressure:									
1 = 0,6 bar 3 = 3 bar 6 = 5,5 bar									
Type of switch:									
FV = inductive position switch									
only for LIDAH: X = Voltage code see section 9									
only for LIDAH: without solenoid connectors to be ordered separately (see tab. K500)									
Pilot valve only for LIDAH: -I = DHI for AC and DC supply with cURus certified solenoids -E = DHE for AC and DC supply high performances -ER = DHER, as DHE but with cURus certified solenoids									

7 HYDRAULIC SYMBOLS



8 STATUS OF OUTPUT SIGNALS

for cartridge valves (for LIFI and LIDA*/FV)



9 VOLTAGE CODE

Valve	External supply nominal voltage ± 10%	Voltage code	Type of connector	Power consumption
DHI DUH DPHI	6 DC	6 DC	SP-666 or SP-667	33 W
	9 DC	9 DC		
	12 DC	12 DC		
	14 DC	14 DC		
	18 DC	18 DC		
	24 DC	24 DC		
	28 DC	28 DC		
	48 DC	48 DC		
	110 DC	110 DC		
	125 DC	125 DC		
LIDAH-I LIDEW-I LIDBH-I	220 DC	220 DC	SP-669	60 VA
	24/50 AC	24/50/60 AC (1)		
	24/60 AC	24/50/60 AC (1)		
	48/50 AC	48/50/60 AC (1)		
	48/60 AC	48/50/60 AC (1)		
	110/50 AC	110/50/60 AC (1)		
	120/60 AC	120/60 AC		
	230/50 AC	230/50/60 AC (1)		
	230/60 AC	230/50/60 AC (1)		
	110/50 AC	110RC		
DHU	120/60 AC		SP-669	40 VA 35 VA
	230/50 AC	230/50/60 AC (1)		
	230/60 AC	230/50/60 AC (1)		
	230/60 AC	230RC		

(1) not for DHU

Valve	External supply nominal voltage ± 10%	Voltage code	Type of connector	Power consumption
LIDAH-E(R) LIDEW-E(R) LIDBH-E(R)	12 DC	12 DC	SP-666 or SP-667	30 W
	14 DC	14 DC		
	24 DC	24 DC		
	28 DC	28 DC		
	48 DC	48 DC		
	110 DC	110 DC		
	125 DC	125 DC		
	220 DC	220 DC		
	110/50 AC	110/50/60 AC		
	230/50 AC	230/50/60 AC		
DKE	115/60 AC	115/60 AC	SP-669	58 VA
	230/60 AC	230/60 AC		
	110/50 AC	110 RC		
	120/60 AC			
DKER	230/50 AC	230 RC	SP-667	85 VA (DKE) 105 VA (DKER)
	12 DC	12 DC		
	24 DC	24 DC		
	110 DC	110 DC		
	220 DC	220 DC		
	110/50/60 AC	110/50/60 AC		
DKE	230/50/60 AC	230/50/60 AC	SP-669	36 W (DKE) 39 W (DKER)
	110/50 AC	110 DC		
	230/50 AC	220 DC		
	110/50/60 AC	110/50/60 AC		

10 MAIN CHARACTERISTICS

Installation position	Any position
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	from -20°C to +70°C
Fluid	Hydraulic oil as per DIN 51524 535; for other fluids see section 1
Recommended viscosity	15 ÷ 100 mm²/s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 µm ($\beta_{10} \geq 75$ recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (/PE seals)
Flow direction	As shown in the symbols of tables 2
Operating pressure	DHI P, A, B = 350 bar T = 100 bar (version /FI); 120 bar (version /FV)
	DHU P, A, B = 350 bar T = 100 bar (version /FI)
	DHE DHER P, A, B = 350 bar T = 100 bar (version /FI); 210 bar (DC solenoid - version /FV); 160 bar (AC solenoid - version /FV)
	DKE P, A, B = 315 bar T = (with Y port not connected to tank) 100 bar (version /FI); 210 bar (DC solenoid - version /FV); 120 bar (AC solenoid - version /FV) T = (with Y port drained to tank) 250 bar
	DKER P, A, B = 315 bar T = (with Y port not connected to tank) 100 bar (version /FI); 210 bar (DC solenoid - version /FV); 160 bar (AC solenoid - version /FV) T = (with Y port drained to tank) 250 bar
	DPH* P, A, B, X = 350 bar T = 250 bar for external drain (standard) T and Y with internal drain (option /D) = 120 bar DPHI; 210 bar DPHE(R) (DC); 160 bar DPHE(R) (AC) Ports Y (if required): 0 bar Minimum pilot pressure for correct operation is 8 bar
Maximum flow	LIFI LIDA/FV A, B, X = 315 bar Y = see port T of selected pilot valve (DHI, DHE or DHER)
	DHI, DHU 60 l/min see technical table E010, section 8, operating limits
	DHE, DHER 80 l/min see technical table E015, section 9, operating limits
	DKE, DKER 120 l/min see technical table E025, section 9, operating limits
	DPH* DPH*-1: 160 l/min ; DPH*-2: 300 l/min ; DPH*-3: 650 l/min ; DPH*-4: 700 l/min ; DPH*-6: 1000 l/min
	LIFI (at $\Delta P = 6$ bar) poppet 42 size 16 = 150 l/min ; size 25 = 320 l/min ; size 32 = 600 l/min ; size 40 = 1250 l/min ; size 50 = 2000 l/min poppet 43 size 16 = 130 l/min ; size 25 = 300 l/min ; size 32 = 480 l/min ; size 40 = 940 l/min ; size 50 = 1500 l/min
LIDA/FV (at $\Delta P = 6$ bar)	poppet 43 size 16 = 130 l/min ; size 25 = 300 l/min ; size 32 = 480 l/min ; size 40 = 940 l/min ; size 50 = 1500 l/min

10.1 Coils characteristics

	H (180°C) for all valves with DC coils and DHI, DPHI with AC coils F (155°C) for DHE, DHER, DKE, DKER, DPHE, DPHER with AC coils Due to the occurring surface temperatures of the solenoid coils, the European standards EN563 and EN ISO 4413 must be taken into account
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 6
Supply voltage tolerance	± 10%
Certification (only DHI, DHU, DHER, DKER, DPHI and DPHER)	cURus North American standard

WARNING: the inobservance of following prescriptions invalidates the certification and may represent a risk for personnel injury

Safety valves must be installed and commissioned only by qualified personnel

Safety valves must not be disassembled

The inductive proximity switch or the position switch can be adjusted only by the manufacturer

Valve's components cannot be interchanged

The valves must operate without switching shocks and spool / poppet vibrations



12 TECHNICAL CHARACTERISTICS OF INDUCTIVE PROXIMITY AND POSITION SWITCHES

Type of switch	inductive proximity /FI	position switch /FV	inductive proximity - only for LIFI
Supply voltage [V]	10÷30	20÷32	10÷30
Ripple max [%]	≤ 10	≤ 10	≤ 5
Max current [mA]	100	400	200
Power consumption [mA]	10	-	8
Voltage drop [V]	≤ 3	-	≤ 1,5
Max switching frequency [Hz]	1000	-	1000
Max peak pressure [bar]	20	400	350
Mechanical life		virtually infinite	
Switch logic		PNP	

13 CONNECTORS FOR INDUCTIVE PROXIMITY AND POSITION SWITCHES

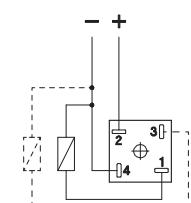
The connector for proximity switch and mechanical microswitches are always supplied with the valves

VALVE TYPE	CONNECTOR TYPE	protection degree
DHI/FI, DHU/FI, DHE/FI, DHER/FI	SP-345	IP65
DHI/FV, DHE/FV, DHER/FV, DKE/FV, DKER/FV	SP-ZBE-06	IP65
DKE/FI, DKER/FI	SP-666 (single solenoid) - SP-664 (double solenoid)	IP65
DPH/FV	SP-ZBE-06	IP65
LIDA*/FV	SP-ZBE-06	IP65
LIFI	SP-BKS-B-20-4-03 Special connector with 3 mt molded cable (included)	IP67

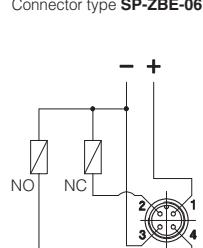
NOTE: valve type DKE*/FI double solenoid, configuration 75, use connector SP-666

14 CONNECTING SCHEMES OF INDUCTIVE PROXIMITY AND POSITION SWITCHES

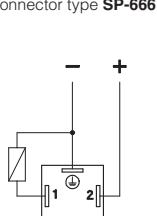
DH*/FI single solenoid / double solenoid (dotted line)	/FV (all valves) single and double solenoid	DKE*/FI single solenoid	DKE*/FI double solenoid	LIFI
Connector type SP-345	Connector type SP-ZBE-06	Connector type SP-666	Connector type SP-664	Connector type SP-BKS-B-20-4-03



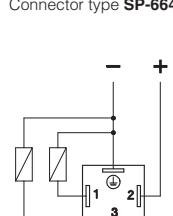
1 = output signal S (SA for double solenoid)
2 = supply +24 Vdc
3 = not connected (output signal SB for double solenoid)
4 = GND



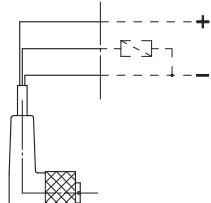
1 = supply +24 Vdc
2 = output signal NC
3 = GND
4 = output signal NO



1 = output signal S
2 = supply +24 Vdc
3 = GND
4 = GND



1 = output signal SA
2 = supply +24 Vdc
3 = output signal SB
4 = GND



black = output signal
brown = supply +24 Vdc
blue = GND
CABLE LENGTH = 3 m

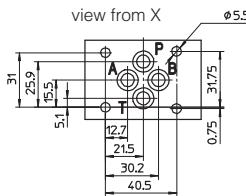
NOTE: the /FI switch and /FV position switch are not provided with a protective earth connection

15 OPTIONAL CONNECTOR TYPE SP-666/M12 FOR DKE AND DKER

to be ordered separately

Optional connector type SP-666/M12	CONNECTING SCHEMES	
	DKE*/FI single solenoid	DKE*/FI double solenoid
	<p>1 = supply +24 Vdc 2 = output signal S 3 = supply GND 4 = not connected</p>	<p>1 = supply +24 Vdc 2 = output signal SA 3 = supply GND 4 = output signal SB</p>

The optional connector type SP-666/M12 provides the standard interface DIN 43650 for connection to switch type /FI and the M12 standard interface to the user side.

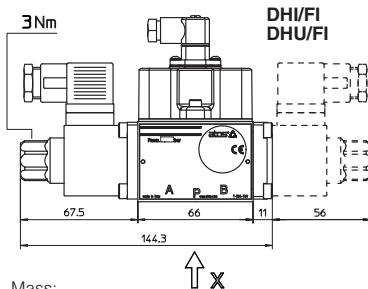


ISO 4401: 2005
Mounting surface: 4401-03-02-0-05

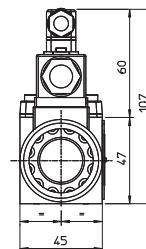
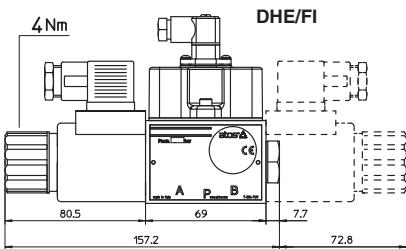
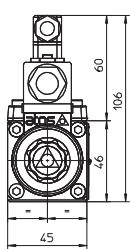
Fastening bolts:
 4 socket head screws: M5x50 class 12.9 (DHI, DHU)
 M5x30 class 12.9 (DHE, DHER)

Tightening torque = 8 Nm
 Seals: 4 OR 108
 Ports P,A,B,T: Ø = 7.5 mm (max)

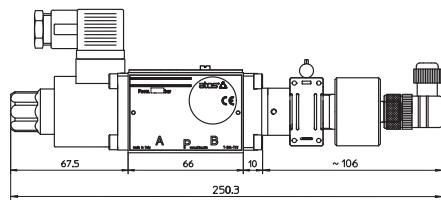
P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT
 For the max pressures on ports,
 see section [10](#)



Mass:
 kg 1.6 (one solenoid)
 kg 1.9 (two solenoids)

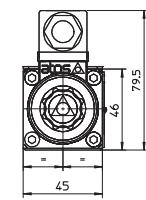
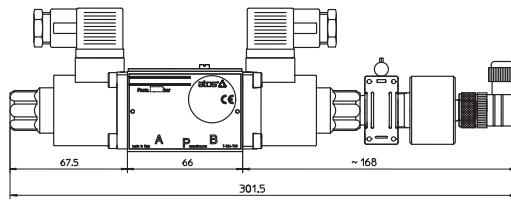


DHI-06/FV

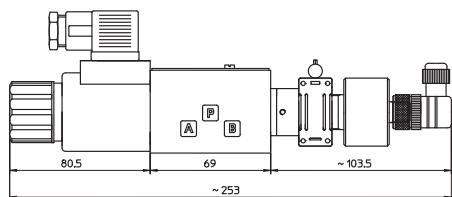


Mass:
 kg 1.85 (one solenoid)
 kg 2.1 (two solenoids)

DHI-07/FV

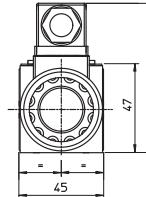
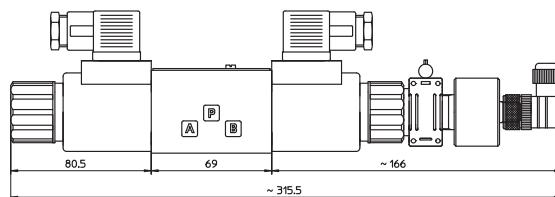


DHE-06/FV

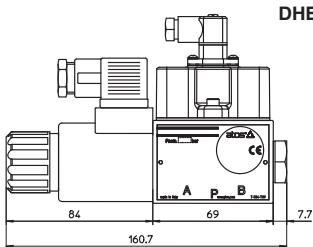


Mass:
 kg 1.9 (one solenoid)
 kg 2.15 (two solenoids)

DHE-07/FV

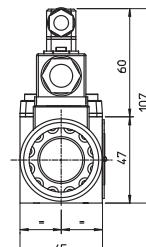
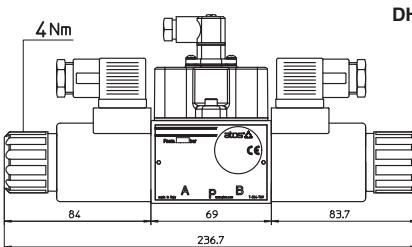


DHER-06/FI

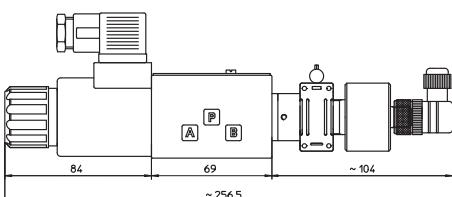


Mass:
 kg 1.85 (one solenoid)
 kg 2.1 (two solenoids)

DHER-07/FI

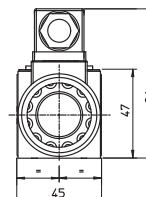
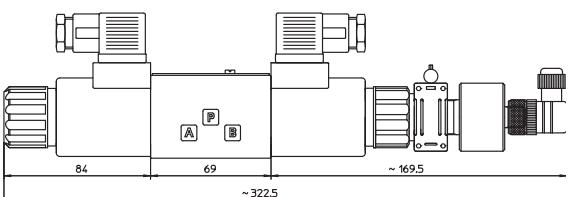


DHER-06/FV

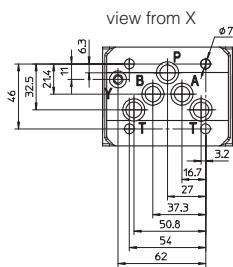


Mass:
 kg 1.9 (one solenoid)
 kg 2.15 (two solenoids)

DHER-07/FV



Note: the above dimensions refer to the valves with DC solenoids - the valves with AC solenoids are shorter (-13 mm max for each solenoid)

**ISO 4401: 2005****Mounting surface: 4401-05-05-0-05****(without port X)**

Fastening bolts:

4 socket head screws M6x40 class 12.9

Tightening torque = 15 Nm

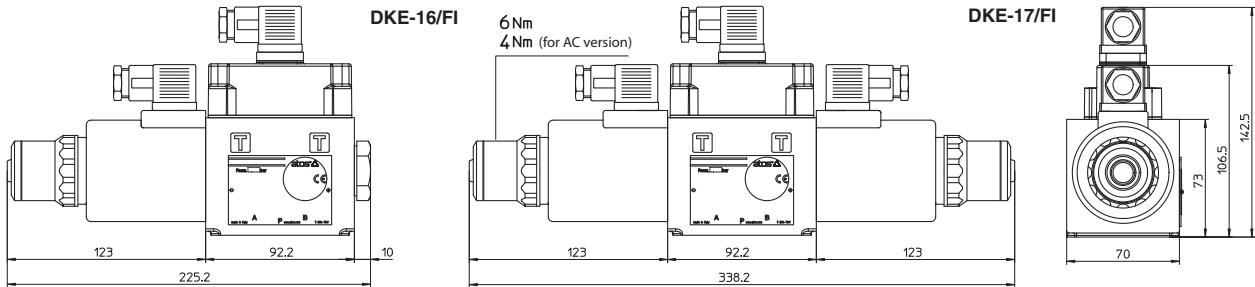
Seals: 5 OR 2050, 1 OR 108

Ports P,A,B,T: Ø = 11.5 mm (max)

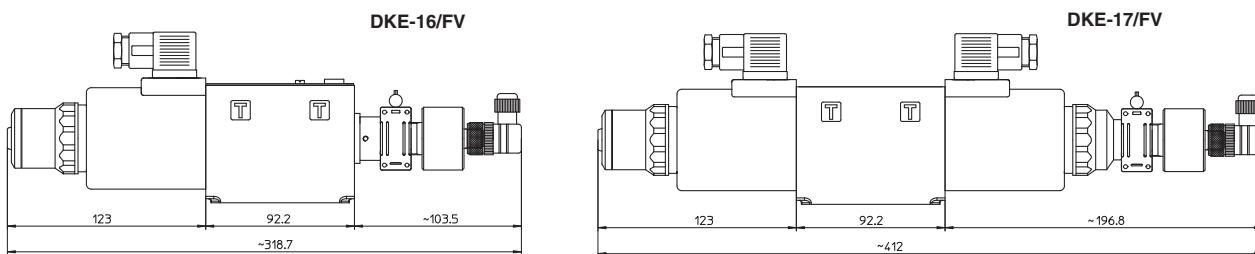
Ports Y: Ø = 5 mm

P = PRESSURE PORT**A, B** = USE PORT**T** = TANK PORT**Y** = DRAIN PORT

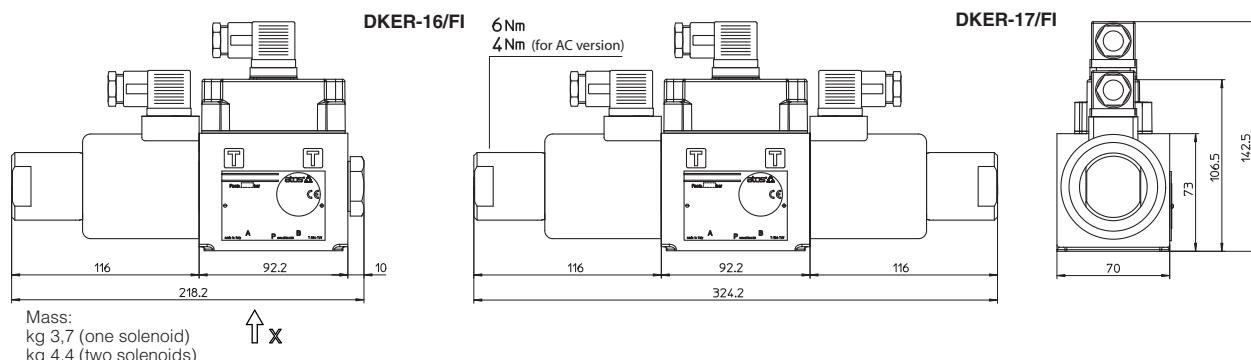
For the max pressures on ports, see section 10



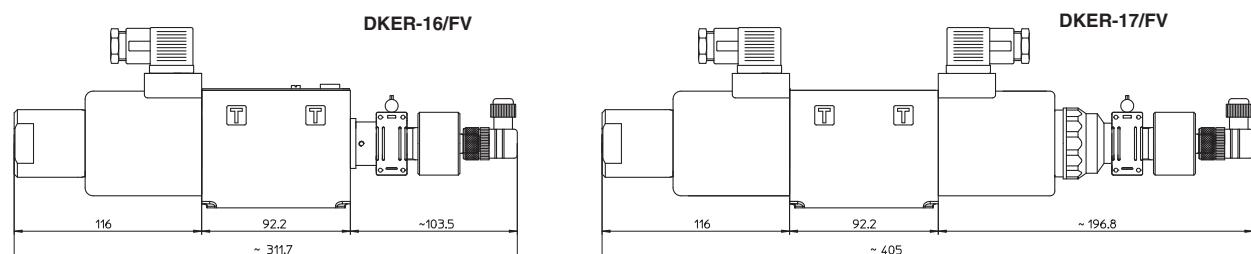
Mass:
kg 3.7 (one solenoid)
kg 4.4 (two solenoids)



Mass:
kg 4.5 (one solenoid)
kg 6.0 (two solenoids)

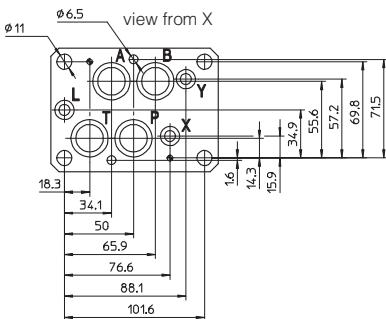


Mass:
kg 3.7 (one solenoid)
kg 4.4 (two solenoids)



Mass:
kg 4.3 (one solenoid)
kg 5.8 (two solenoids)

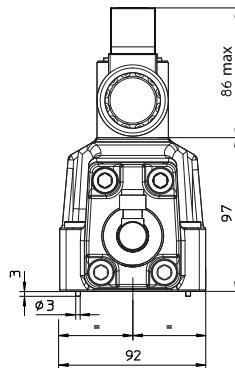
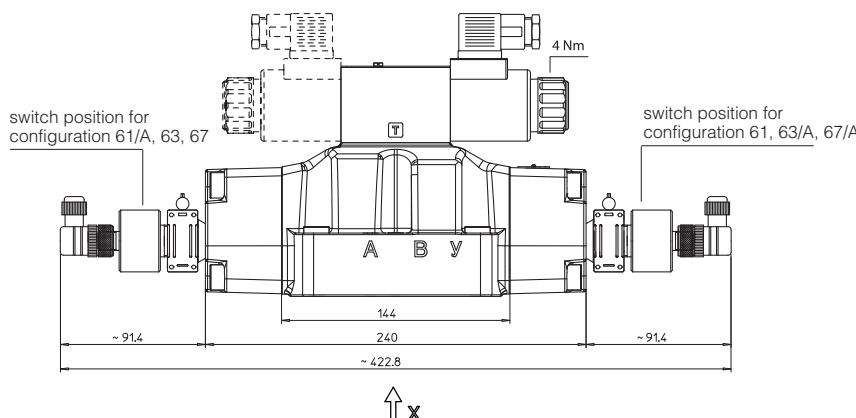
Note: the above dimensions refer to the valves with DC solenoids - the valves with AC solenoids (-31.5 mm max for each solenoid)



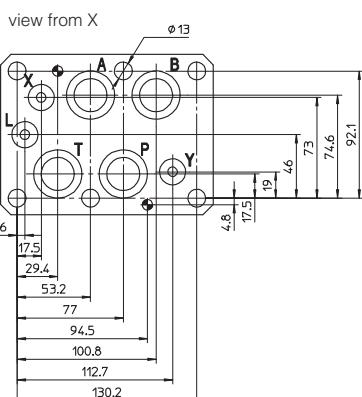
DPH*-2*
ISO 4401: 2005
Mounting surface: 4401-07-07-0-05

Fastening bolts:
4 socket head screws M10x50 class 12.9
Tightening torque = 70 Nm
2 socket head screws M6x40 class 12.9
Tightening torque = 15 Nm
Diameter of ports A, B, P, T: Ø = 20 mm;
Diameter of ports X, Y: Ø = 7 mm;
Diameter of ports L: Ø = 5 mm;
Seals: 4 OR 130, 3 OR 109/70

P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT
X = EXTERNAL OIL PILOT PORT
Y = DRAIN PORT
For the max pressures on ports,
see section [10](#)



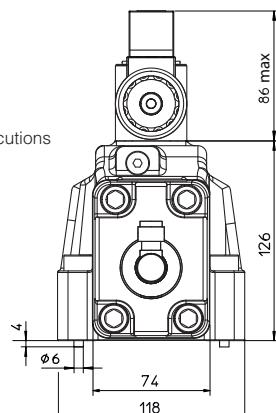
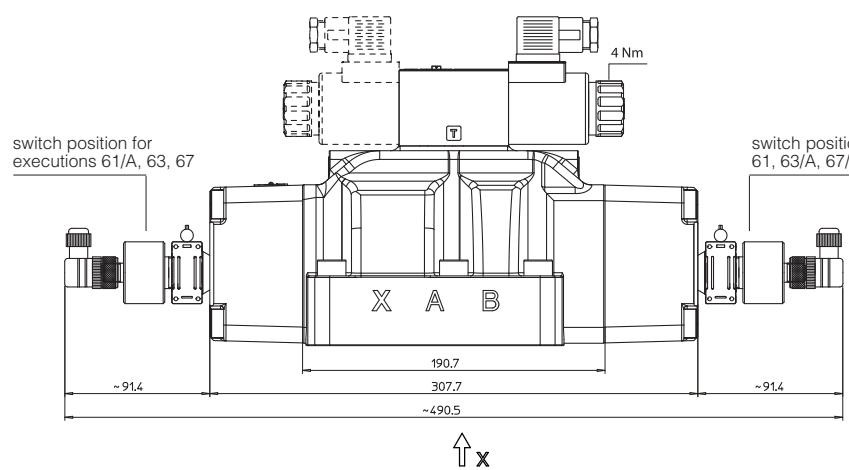
Mass:
kg 9,6 (one solenoid)
kg 10,3 (two solenoids)



DPH*-4*
ISO 4401: 2005
Mounting surface: 4401-08-08-0-05

Fastening bolts:
6 socket head screws M12x50 class 12.9
Tightening torque = 125 Nm
Diameter of ports A, B, P, T: Ø = 24 mm;
Diameter of ports X, Y: Ø = 7 mm;
Diameter of port L: Ø = 5 mm;
Seals: 4 OR 4112, 3 OR 3056

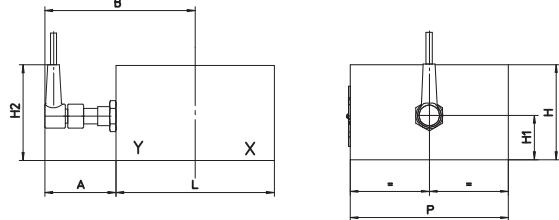
P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT
X = EXTERNAL OIL PILOT PORT
Y = DRAIN PORT
For the max pressures on ports,
see section [10](#)



Mass:
kg 14,6 (one solenoid)
kg 15,3 (two solenoids)

Note: for configurations 71 and 75 the switch position is on both sides of the valve

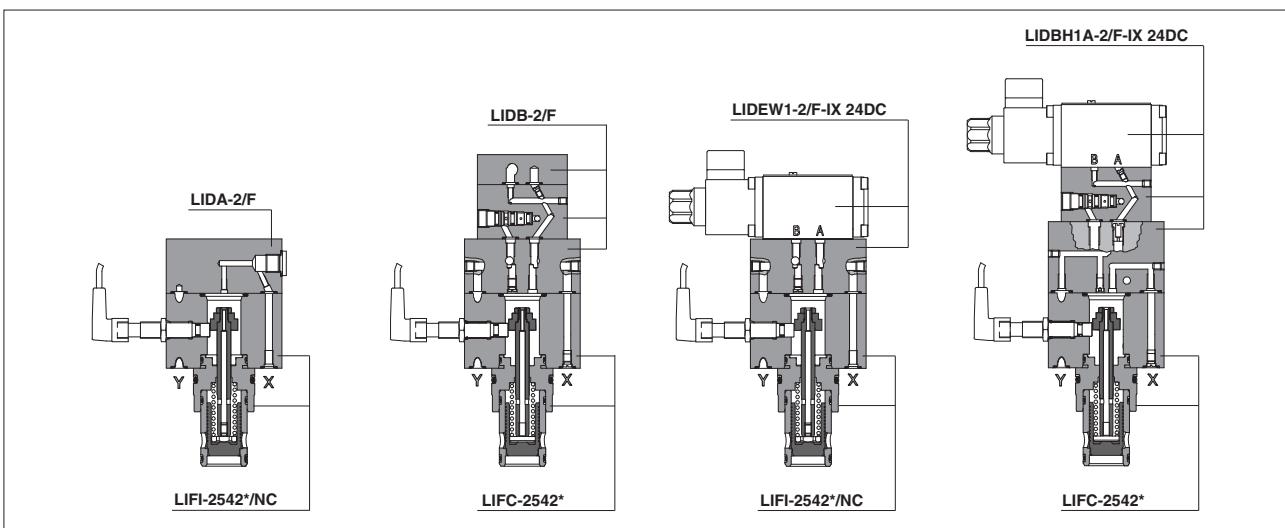
19 DIMENSIONS of LIFI SAFETY COVERS [mm]



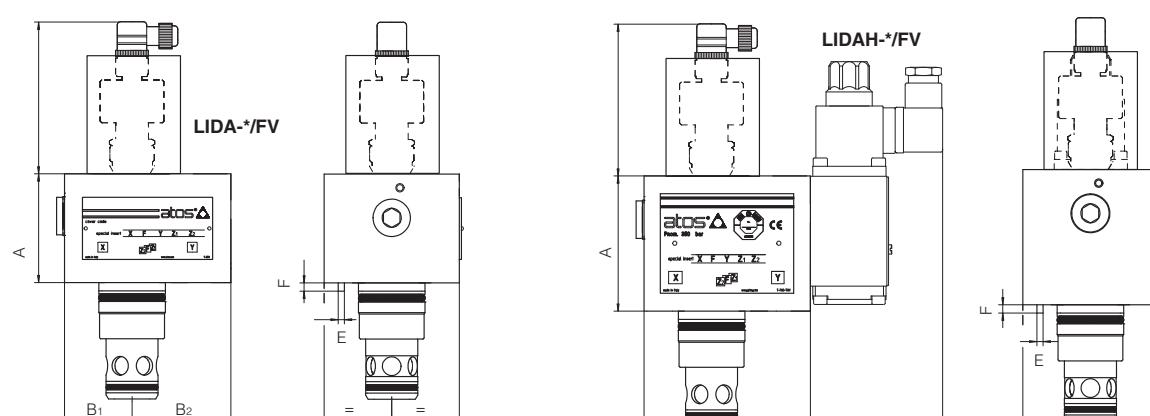
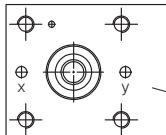
	A	B	H	H1	H2	L	P
LIFI-16	54,5	94	50	25	56	72	65
LIFI-25	54,5	97	55	28	59	85	85
LIFI-32	47	97	60	28	59	100	100
LIFI-40	41	103,5	60	30	61	125	125
LIFI-50	44	114	70	30	61	140	140

Note: for cover interface and cavity dimensions ISO 7368, see table P006

20 EXEMPLES OF LIFI COUPLED WITH OTHER COVERS (examples with cartridges size 25)



21 DIMENSIONS of LIDA*/FV SAFETY CARTRIDGES [mm]

Cover interface of LIDA*/FV and LIDAH*/FV
UNI ISO 7368
Y port only for LIDAH*/FV

Size	A LIDA	A LIDAH	B	B ₁	B ₂	C max	D	E	F	Seal (for LIDA)	Seal (for LIDAH)	Fastening bolts	Tightening torque (Nm)
16	65	85	80	32,5	47,5	86	65	3	4	1 OR 108	2 OR 108	4 M8x60	35
25	70	85	85	42,5	42,5	86	85	5	4	1 OR 108	2 OR 108	4 M12x60	125
32	75	85	100	50	50	86	100	5	6	1 OR 2043	2 OR 2043	4 M16x70	300
40	75	85	125	62,5	62,5	86	125	5	6	1 OR 2050	2 OR 2050	4 M20x80	600
50	80	85	140	70	70	86	140	6	4	1 OR 2050	2 OR 2050	4 M20x90	600

Note: for cover interface and cavity dimensions ISO 7368, see table P006